Test Report

Verified code: 122679

Report No.: E202112276794-18

Customer:	NunoErin, LLC
Address:	533 Commerce Street, Jackson MS 39201 USA
Sample Name:	Wall mount tablet
Sample Model:	UCTBWM-15.6
Receive Sample Date:	Dec.29,2021
Test Date:	Dec.31,2021 ~ Apr.21,2022
Reference Document:	CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.
Test Result:	Pass

Prepared by: Reviewed by: Approved by:

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-05-27

GUANGZHOU GRG METROLOGY & TEST CO., LTD.
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5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202112276794-18	Original Issue	2022-04-27

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1. GENERAL DESCRIPTION OF EUT

1.1. APPLICANT

Name:	NunoErin, LLC
Address:	533 Commerce Street, Jackson MS 39201 USA

1.2. MANUFACTURER

Name:	Chengdu Vantron Technology Co., Ltd.
Address:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

1.3. FACTORY

Name:	Chengdu Vantron Technology Co., Ltd.
Address:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

1.4. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment:	Wall mount tablet
Model No.:	UCTBWM-15.6
Adding Model:	/
Trade Name:	NunoErin
FCC ID:	2A5VA- UCTBWM156
Rating:	100-240VAC; 50/60Hz; 1.0A
Frequency Range:	BT&BLE: 2402-2480MHz 2.4G wifi: 2412MHz-2462MHz for 802.11b/g/n HT20 5G wifi: U-NII-1: 5150 MHz~5250 MHz U-NII-3: 5725 MHz~5850 MHz
Transmit Power:	BLE: 1.98dBm for BLE 1M, -1.23dBm for BLE 2M BT: GFSK: 8.02dBm π/4-DQPSK: 6.31dBm 8DPSK: 6.51dBm 2.4G wifi: 17.28dBm for IEEE 802.11b mode 16.50dBm for IEEE 802.11g mode 16.75dBm for IEEE 802.11n HT20 mode 5G wifi: U-NII-1: 14.61dBm for IEEE 802.11a 14.37dBm for IEEE 802.11n HT20

	14.40dBm for IEEE 802.11ac VHT20 14.70dBm for IEEE 802.11n HT40 14.75dBm for IEEE 802.11ac VHT40 14.53dBm for IEEE 802.11ac VHT80 U-NII-3: 14.00dBm for IEEE 802.11a 13.52dBm for IEEE 802.11n HT20 13.48dBm for IEEE 802.11ac VHT20 14.50dBm for IEEE 802.11n HT40 14.25dBm for IEEE 802.11ac VHT40 14.02dBm for IEEE 802.11ac VHT80
Modulation type:	BLE: GFSK BT: FHSS (GFSK for 1Mbps, π/4-DQPSK for 2Mbps,8DPSK for 3Mbps) 2.4G wifi: DSSS for IEEE 802.11b mode; OFDM for IEEE 802.11g/n mode 5G wifi: OFDM for IEEE 802.11a/n/ac mode
Antenna Specification:	BLE&BT: Internal antenna with 3dBi gain (Max.) 2.4G wifi: Internal antenna with 3dBi gain (Max) 5G wifi: U-NII-1: Internal antenna with 3dBi gain (Max.) U-NII-3: Internal antenna with 3dBi gain (Max.)
Temperature Range:	0℃~ 50℃
Hardware Version:	V2.0
Software Version:	Android 10
Sample No:	E202112276794-0001, E202112276794-0002

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2. LABORATORY AND ACCREDITATIONS

2.1. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.:	No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China.
P.C.:	518110
Tel :	0755-61180008
Fax:	0755-61180008

2.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	ISED (Company Number: 24897, CAB identifier:CN0069)
USA	FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site, http://www.grgtest.com

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3. EVALUATION METHOD

Exposure category: General population/uncontrolled environment
EUT Type: Production Unit
Device Type: Mobile Device

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.
In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

4. LIMITS FOR GENERAL POPULATION/UNCONTROLLEDEXPOSURE

(B)Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength(H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time$[E]^2$, $[H]^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100,000	/	/	1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

5. CALCULATION METHOD

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01
$S=PG/4\pi R^2$
Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to anisotropic radiator
R=distance to the center of radiation of the antenna
From the EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the maximum gain of the used as following information, the RF power density can be obtained.

Mode	Antenna type	Maximum antenna gain
BT	Internal antenna	3dBi
BLE	Internal antenna	3dBi
2.4GHz Wi-Fi	Internal antenna	3dBi
5GHz Wi-Fi	Internal antenna	3dBi

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6. ESTIMATION RESULT

6.1. CONDUCTED POWER RESULTS

2.4G Wi-Fi

Mode	Frequency(MHz)	Peak Conducted Output Power (dBm)
IEEE 802.11b	2412	17.19
	2437	17.28
	2462	17.13
IEEE 802.11g	2412	16.43
	2437	16.50
	2462	16.50
IEEE 802.11n HT20	2412	16.63
	2437	16.71
	2462	16.75

5GHz Wi-Fi

Test Mode	Band	Frequency (MHz)	AVG Conducted Output Power (dBm)
IEEE 802.11a	U-NII-1	5180	14.61
		5200	14.47
		5240	14.46
	U-NII-3	5745	14.00
		5785	13.63
		5825	13.32
IEEE 802.11n HT20	U-NII-1	5180	14.37
		5200	14.04
		5240	13.83
	U-NII-3	5745	13.52
		5785	13.10
		5825	12.86
IEEE 802.11ac VHT20	U-NII-1	5180	14.40
		5200	14.14
		5240	13.97
	U-NII-3	5745	13.48
		5785	13.28
		5825	13.00
IEEE 802.11n HT40	U-NII-1	5190	14.70
		5230	14.36
	U-NII-3	5755	14.50
		5795	13.92
IEEE 802.11ac VHT40	U-NII-1	5190	14.75
		5230	14.50
	U-NII-3	5755	14.25
		5795	14.11

IEEE 802.11ac VHT80	U-NII-1	5210	14.53
	U-NII-3	5775	14.02

BLE

Mode	Frequency(MHz)	Peak Conducted Output Power (dBm)
1Mbps	2402	1.52
	2440	1.98
	2480	1.41
2Mbps	2402	-1.70
	2440	-1.23
	2480	-1.76

BT

Mode	Frequency(MHz)	Peak Conducted Output Power (dBm)
DH5	2402	7.21
	2441	8.02
	2480	7.90
2DH5	2402	5.79
	2441	6.31
	2480	6.25
3DH5	2402	5.91
	2441	6.51
	2480	6.35

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6.2. MANUFACTURING TOLERANCE

Frequency (MHz)	2.4G Wi-Fi			
	IEEE 802.11b	IEEE 802.11g	IEEE 802.11n HT20	IEEE 802.11n HT40
	2437	2437	2462	/
Target (dBm)	18.0	17.0	17.0	/
Tolerance ±(dB)	1.0	1.0	1.0	/

Frequency (MHz)	5G Wi-Fi			
	IEEE 802.11a	IEEE 802.11n HT20	IEEE 802.11ac VHT20	IEEE 802.11n HT40
	5180	5180	5180	5190
Target (dBm)	15.0	15.0	15.0	15.0
Tolerance ±(dB)	1.0	1.0	1.0	1.0

Frequency (MHz)	5G Wi-Fi	
	IEEE 802.11ac VHT40	IEEE 802.11ac VHT80
	5190	5210
Target (dBm)	15.0	15.0
Tolerance ±(dB)	1.0	1.0

Frequency (MHz)	BLE	
	1Mbps	2Mbps
	2440	2440
Target (dBm)	2.0	-1.0
Tolerance ±(dB)	1.0	1.0

Frequency (MHz)	BT		
	DH5	2DH5	3DH5
	2441	2441	2441
Target (dBm)	9.0	7.0	7.0
Tolerance ±(dB)	1.0	1.0	1.0

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6.3. MEASUREMENT RESULTS

2.4G Wi-Fi

Mode	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle (%)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	(dBm)	(mW)					
IEEE 802.11b	19	79.4328	3	1.9953	99.64	0.0315	1.0000
IEEE 802.11g	18	63.0957	3	1.9953	96.53	0.0251	1.0000
IEEE 802.11n HT20	18	63.0957	3	1.9953	97.04	0.0251	1.0000

5G Wi-Fi

Mode	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle (%)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	(dBm)	(mW)					
IEEE 802.11a	16	39.8107	3	1.9953	97.20	0.0158	1.0000
IEEE 802.11n HT20	16	39.8107	3	1.9953	97.04	0.0158	1.0000
IEEE 802.11n HT40	16	39.8107	3	1.9953	92.75	0.0158	1.0000
IEEE 802.11ac VHT20	16	39.8107	3	1.9953	97.04	0.0158	1.0000
IEEE 802.11ac VHT40	16	39.8107	3	1.9953	92.86	0.0158	1.0000
IEEE 802.11ac VHT80	16	39.8107	3	1.9953	82.50	0.0158	1.0000

BT

Mode	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle (%)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	(dBm)	(mW)					
DH5	10	10.0000	3	1.9953	77.13	0.0040	1.0000
2DH5	8	6.3096	3	1.9953	77.07	0.0025	1.0000
3DH5	8	6.3096	3	1.9953	77.07	0.0025	1.0000

BLE

Mode	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle (%)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	(dBm)	(mW)					
1M	3	1.9953	3	1.9953	62.90	0.0008	1.0000
2M	0	1.0000	3	1.9953	32.26	0.0004	1.0000

Remark: 1. Maximum average power including tune-up tolerance;
2. MPE use distance is 20cm from manufacturer declaration of user manual.

Maximum Simultaneous transmission MPE Ratio for 2.4G Wi-Fi and BT

Maximum MPE ratio 2.4G Wi-Fi	Maximum MPE ratio BT	∑ MPE ratios	Limit	Results
0.0315	0.0040	0.0355	1.000	Pass

Note: 1. 2.4G Wi-Fi Maximum MPE ratio=0.0315 mW/cm^2/1.0000 mW/cm^2=0.0315
2. BT Maximum MPE ratio=0.0040 mW/cm^2/1.0000 mW/cm^2=0.0040
3. ∑ MPE ratios=0.0315+0.0040=0.0355
4. The estimation distance is 20cm.

Maximum Simultaneous transmission MPE Ratio for 5G Wi-Fi and BT

Maximum MPE ratio 5G Wi-Fi	Maximum MPE ratio BT	∑ MPE ratios	Limit	Results
0.0158	0.0040	0.0198	1.000	Pass

Note: 1. 5G Wi-Fi Maximum MPE ratio=0.0158 mW/cm^2/1.0000 mW/cm^2=0.0158
2. BT Maximum MPE ratio=0.0040 mW/cm^2/1.0000 mW/cm^2=0.0040
3. ∑ MPE ratios=0.0158+0.0040=0.0198
4. The estimation distance is 20cm.

7. CONCLUSION

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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